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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,806	02/27/2001	Shouichi Hirota	503.39687X00	3554

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EXAMINER

SHAPIRO, LEONID

ART UNIT	PAPER NUMBER
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2673

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DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/763,806	HIROTA ET AL.	
	Examiner	Art Unit	
	Leonid Shapiro	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-8,14,15,33,34 and 42-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,14,15,33,34 and 42-49 is/are rejected.
- 7) ☒ Claim(s) 46-48 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Information Disclosure Statement

1. The information disclosure statement filed on 12-021-01 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because it is not submitted as PTO-1449 form. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Drawings

2. The corrected drawings were received and approved on 04-07-03. These drawings are 6(a) and 6 (b).

Specification

3. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

4. Substitute specification filed on 07-27-01 is entered.

5. Amendments to specification filed on 04-07-03 are "not entered" as line and page numbers do not match.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 46-48 are rejected under 35 U.S.C. 112, second paragraph. Claim 46 recites the limitation "rejection means" in second line. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2, 4-6, 33-34, 42-44, 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobsen et al. (US Patent No. 6,232,937 B1) in view of Hoeksma (US Patent 6,175,353 B1) and further in view of Kochi (US Patent No. 5, 689,321).

As to claim 1, Jacobsen et al. teaches a portable information terminal with: a display section for displaying an image corresponding to a received image signal (See Fig. 8, item 202, in description See Col. 2, Lines 50-57 and Col. 5, Lines 17-19); a light source for supplying light to the display section (See Fig. 2C, item 111, in description See Col. 2, Lines 50-57 and Col. 9, Lines 53-25); a driving section for controlling an operation of display section (See Fig. 2C, items 122, 112, in description See Col. 9, Lines 14-28); wherein the portable information

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terminal has a color display mode as a display mode of the image displayed in display section (See Fig. 2B, items 102, 103, 105, in description See Col. 8, Lines 25-28).

Jacobsen et al. does not teach a monochromatic display mode

Hoeksma shows the monochromatic display mode (See Fig. 4, item 47, in description See Col. 4, Lines 37-43 and Col. 5, Lines 3-9). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement the a monochromatic display mode as shown by Hoeksma in the Jacobsen et al. portable information terminal in order to reduce power consumption since illumination becomes problematic, particularly LEDs (See Col. 1, Lines 30-37 in Hoeksma reference).

Jacobsen et al. and Hoeksma do not show switching means enables selection of one of the color display mode and the monochromatic display mode as the display mode of the image displayed in display section.

Kochi teaches switching means enables selection of one of the color display mode and the monochromatic display mode as the display mode of the image displayed in display section (See Fig. 1, item 10, in description See Col. 3, Lines 27-45). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement switching means enables selection of one of the color display mode and the monochromatic display mode as the display mode of the image displayed in display section as shown by Kochi in the Jacobsen et al. and Hoeksma portable information terminal in order to reduce power consumption since illumination becomes problematic, particularly LEDs (See Col. 1, Lines 30-37 in Hoeksma reference).

As to claims 2, 43, Jacobsen et al. teaches multi-gradation display is set in color display mode (See Fig. 2B, items 102, 103, 105, D/A, in description See Col. 8, Lines 25-27) and

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Hoeksma teaches monochromatic display mode (See Fig. 4, item 47, in description See Col. 4, Lines 37-43 and Col. 5, Lines 3-9).

As to claims 4-5, Jacobsen et al. teaches a device with: a display section for displaying an image corresponding to a received image signal (See Fig. 8, item 202, in description See Col. 2, Lines 50-57 and Col. 5, Lines 17-19); a light source for supplying light to the display section (See Fig. 2C, item 111, in description See Col. 2, Lines 50-57 and Col. 9, Lines 53-25); a driving section for controlling an operation of display section (See Fig. 2C, items 122, 112, in description See Col. 9, Lines 14-28); wherein the portable information terminal has a color display mode as a display mode of the image displayed in display section (See Fig. 2B, items 102, 103, 105, in description See Col. 8, Lines 25-28); a light source control section for controlling an operation of light source in accordance with the image signal from signal generating section (See Fig. 2I, in description See Col. 12, lines 14-28); a signal processing section for processing the image signal in accordance with the image signal from signal generating section (See Fig. 2F, items 1122, 1112, in description See Col. 10, lines 53-65)

Jacobsen et al. does not teach a signal generating section for generating an image signal corresponding to the display mode of display section by instructions of the display mode judging section: a signal processing switching section for switching a signal processing path in accordance with the control signal from the signal generating section.

Hoeksma shows a signal generating section for generating an image signal corresponding to the display mode of display section by instructions of the display mode judging section; a signal processing switching section for switching a signal processing path in accordance with the control signal from the signal generating section (See Fig. 3-5, items 32, 26, 25, 39, 61-70, in

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description See Col.4, Lines 37-47 and Col 5, Lines 3-65). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement a signal generating section for generating an image signal corresponding to the display mode of display section by instructions of the display mode judging section as shown by Hoeksma in the Jacobsen et al. device in order to reduce power consumption since illumination becomes problematic, particularly LEDs (See Col. 1, Lines 30-37 in Hoeksma reference).

Jacobsen et al. and Hoeksma do not show display mode judging section for judging of one of the color display mode and the monochromatic display mode as the display mode of the image displayed in display section.

Kochi teaches display mode judging section for judging of one of the color display mode and the monochromatic display mode as the display mode of the image displayed in display section (See Fig. 1, item 10, in description See Col. 3, Lines 27-45). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement display mode judging section for judging of one of the color display mode and the monochromatic display mode as the display mode of the image displayed in display section as shown by Kochi in the Jacobsen et al. and Hoeksma portable information terminal in order to reduce power consumption since illumination becomes problematic, particularly LEDs (See Col. 1, Lines 30-37 in Hoeksma reference).

As to claim 6, Jacobsen et al. teaches a frequency control section for switching the control of an operating frequency of signal processing section in accordance with control signal from signal generating section (See Col. 4, Lines 10-14).

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As to claim 33 Jacobsen et al. teaches a display unit having a light source with: a display section for displaying an image in accordance with image signal from the image signal processing section (See Fig. 8, item 202, in description See Col. 2, Lines 50-57 and Col. 5, Lines 17-19); a light source control section for controlling an operation of light source in accordance with the signal from signal processing section (See Fig. 2I, in description See Col. 12, lines 14-28); a signal processing section for processing the image signal in accordance with the switching of the processing path in the signal processing switching section (See Fig. 2F, items 1122, 1112, in description See Col. 10, lines 53-65); a signal processing switching section for switching of the signal processing path of inputted image signal (See Fig. 8D-8E, in description See Col. 18, Lines 42-52).

Jacobsen et al. does not teach the monochromatic display mode as the display mode of the image displayed in display section.

Hoeksma shows the monochromatic display mode (See Fig. 4, item 47, in description See Col. 4, Lines 37-43 and Col. 5, Lines 3-9). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement the a monochromatic display mode as shown by Hoeksma in the Jacobsen et al. portable information terminal in order to reduce power consumption since illumination becomes problematic, particularly LEDs (See Col. 1, Lines 30-37 in Hoeksma reference).

Jacobsen et al. and Hoeksma do not show switching section for switching to of one of the color display mode and the monochromatic display mode as the display mode of the image displayed in liquid crystal cell.

Kochi teaches switching section for switching to of one of the color display mode and the monochromatic display mode as the display mode of the image displayed in liquid crystal cell (See Fig. 1, item 10, in description See Col. 3, Lines 27-45). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement switching section as shown by Kochi in the Jacobsen et al. and Hoeksma portable information terminal in order to reduce power consumption since illumination becomes problematic, particularly LEDs (See Col. 1, Lines 30-37 in Hoeksma reference).

As to claim 34 Jacobsen et al. teaches the liquid crystal cell having a pair of transparent substrates, a liquid crystal layer nipped between the pair of transparent substrates, and electrode group arranged in at least one of pair of transparent substrates (See Fig. 2m, items 2080, 1164, in description See Col. 13, Lines 52-67 and Col 14, Lines 1-4); a reflection plate arranged on one face side of liquid crystal cell and a light guide body arranged between liquid crystal cell reflection plate such that light source is arranged on a side face of the light guide body (See Fig. 7E, items 450, 452, 458, in description See Col.17, Lines 33-55); a light polarizing maintaining scattering layer arranged between light guide body and liquid crystal cell (See Fig. 7E, item 462, in description See Col.17, Lines 43-45).

Jacobsen et al. does not teach a monochromatic display mode .

Hoeksma shows the monochromatic display mode (See Fig. 4, item 47, in description See Col. 4, Lines 37-43 and Col. 5, Lines 3-9) and switching means to enable or disable the screen illumination (See Fig. 4, items 26, 36, 38, in description See Col. 5, Lines 3-9). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement the a monochromatic display mode as shown by Hoeksma in the Jacobsen et al. portable information

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terminal in order to reduce power consumption since illumination becomes problematic, particularly LEDs (See Col. 1, Lines 30-37 in Hoeksma reference).

Jacobsen et al. and Hoeksma do not show use switching means for switching between the color display mode and the monochromatic display mode.

Kochi teaches use switching means for switching between the color display mode and the monochromatic display mode (See Fig. 1, item 10, in description See Col. 3, Lines 27-45). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement switching means as shown by Kochi in the Jacobsen et al. and Hoeksma portable information terminal in order to reduce power consumption since illumination becomes problematic, particularly LEDs (See Col. 1, Lines 30-37 in Hoeksma reference).

As to claims 42, 49 Jacobsen et al. teaches a display device, comprising: colored light emitting means for emitting colored light (See Fig. 2C, item 111, in description See Col. 2, Lines 50-57 and Col. 9, Lines 53-25); light polarizing state modulating means for modulating a polarizing state of the colored light to perform a reflection display (See Fig. 6, items 500-508, in description See from Col. 16, Line 57 to Col. 17, Line 8).

Jacobsen et al. does not teach reflection means for reflecting external light to perform a light emitting display.

Hoeksma shows the reflection means for reflecting external light (See Fig. 4, item 47, in description See Col. 4, Lines 37-43 and Col. 5, Lines 3-9). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement the a monochromatic display mode as shown by Hoeksma in the Jacobsen et al. portable information terminal in order to

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reduce power consumption since illumination becomes problematic, particularly LEDs (See Col. 1, Lines 30-37 in Hoeksma reference).

Jacobsen et al. and Hoeksma do not show switching means for selecting one of the color light emitting means and reflection means on the basis of a received image signal.

Kochi teaches use switching means for selecting one of the color light emitting means and reflection means on the basis of a received image signal (See Fig. 1, item 10, in description See Col. 3, Lines 27-45). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement switching means as shown by Kochi in the Jacobsen et al. and Hoeksma portable information terminal in order to reduce power consumption since illumination becomes problematic, particularly LEDs (See Col. 1, Lines 30-37 in Hoeksma reference).

As to claim 44, Jacobsen et al. teaches a liquid crystal cell for enabling display (See Fig. 6, items 500-508, in description See from Col. 16, Line 57 to Col. 17, Line 8).

8. Claims 7-8, 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobsen et al., Hoeksma and Kochi as aforementioned in claim 4 in view of Koh (Patent No. 5,534,883) and further in view of Yamazaki et al. (US Patent 6,424,326 B2).

As to claim 7, Jacobsen et al. teaches signal processing section with n-bit memory, a digital-analog converter connected to the n-bit memory; display mode displayed by the display section has a multi-gradation display mode; in the case of the multi-gradation display mode, signal processing switching section selects n-bit memory in signal processing section, and signal processing processes the image signal generated by signal generating section, by n-bit memory and DAC connected to the n-bit memory (See Fig. 2B, items 105-112, in description See Col. 8,

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Lines 25-63). Jacobsen et al. also shows a two-gradation display mode with large size of black and white characters shown on display, using software and monochromatic mode (See Fig. 8D-8E, in description See Col. 18, Lines 42-52).

Jacobsen et al., Hoeksma and Kochi do not show a 1-bit memory and a level shifter connected to 1-bit memory; in a case of the two-gradation display mode signal processing switching section processes the image signal generated by signal processing section by 1-bit memory and level shifter.

Koh teaches the diving binary display using 1-bit memory (See Abstract and Fig. 10, items 2a, 38, in description See Col. 9, Lines 54-58) and Yamazaki et al. teaches how to use level shifter (See Fig. 7, item 302b, in description See Col. 13, Lines 35-38). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement a level shifter as shown by Yamazaki et al. and 1-bit memory as shown by Koh in the Jacobsen et al., Hoeksma and Kochi device in order to increase power conservation in battery powered device.

As to claim 8, Jacobsen et al. teaches an n-bit memory connected to signal processing switching section; the display mode displayed by display section has a multi-gradation display mode and a two-gradation display mode; when display mode judging section judges the multi-gradation display mode, signal processing switching section selects DAC, and processes the image signal held in n-bit memory connected to signal processing section by DAC (See Fig. 2B, items 105-112, in description See Col. 8, Lines 25-63); and when display mode judging section judges the two-gradation display mode, signal processing switching section processes the image signal held in n-bit memory (See Fig. 8D-8E, in description See Col. 18, Lines 42-52).

Jacobsen et al., Hoeksma and Kochi do not show a level shifter connected to signal processing section.

Yamazaki et al. teaches how to use level shifter (See Fig. 7, item 302b, in description See Col. 13, Lines 35-38). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement a level shifter as shown by Yamazaki et al. in the Jacobsen et al., Hoeksma and Kochi device in order to increase power conservation in battery powered device.

As to claim 14, Jacobsen et al. shows the mode of operation, where large size of black and white characters shown on display, using software and monochromatic mode (See Fig. 8D-8E, in description See Col. 18, Lines 42-52). Jacobsen et al. also shows RGB processing (See Fig. 2F, items 1122, 1112, in description See Col. 10, lines 53-65). It would have been obvious to one of ordinary skill in the art of the time of the invention to implement a frequency control section for switching the control of an operating frequency of signal processing section in the Jacobsen et al., Hoeksma and Kochi. device in order to increase power conservation in battery powered device.

As to claim 15, Jacobsen et al. teaches switching timing of the display mode switched by the display mode judging section is set by the operation of a user (See 8D, in description See Col. 18, Lines 48-50).

9. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobsen et al., Hoeksma and Kochi as aforementioned in claim 42 in view of Iijima (US Patent No. 6,300,989 B1).

Jacobsen et al., Hoeksma and Kochi do not show the reflection means comprises a light polarizing maintaining a scattering layer.

Iijima teaches a light-scattering layer and polarized light separator (See Fig. 2, items 150-160, in description see Col. 10, Lines 14-16). It would have been obvious to one of ordinary skill in the art of the time of the invention to include a light-scattering film as shown by Iijima in the Jacobsen et al, Hoeksma and Kochi device in order to reflect external light to effect display (See Col. 1, Lines 12-13 in Iijima reference).

Response to Amendment

10. Applicant's arguments filed on 04-07-03 with respect to claim 1-2, 4-8, 14-15, 33-34, 42-49 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

The Okumura (US Patent No. 6,184,955 B1) reference discloses reflective LCD device.

The Kuroiwa et al. (US Patent No. 6,317,180 B1) reference discloses LCD device having two absorptive polarizers, a reflective polarizer and a backlight.

The Maeda et al. (US Patent No. 6,285,422 B1) reference discloses transfective LCD device with bright reflective display.

Telephone inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

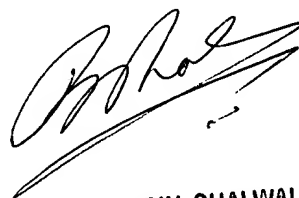
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